

### **REMARKS**

Claims 1-27 are presently pending in this application. Claims 23-27 have been added and support for these claims can be found at least in paragraphs 22, 31-33, and 36. Claims 1-6, 14, 17-21 have been amended and support for the claims can be found in at least paragraphs 14, 22, 28, 31-33, 36 and 37.

In the present Office Action, the Examiner has rejected claims 1-22 under 35 U.S.C. § 103(a) as being unpatentable over Chemical Abstracts Numbers 119:161751 or 112:181468 or 124:205109 or 115:258415 or 113:213128. Applicants respectfully traverse these rejections and the arguments in support thereof as follows, and respectfully request reconsideration and withdrawal of the rejections.

The Examiner states that Abstract 119:161751 discloses melamine containing materials that comprise melamine resins that contain fatty acids, stearic acid melamine resins or behenic acid melamine resins. Regarding Abstract 112:181468, the Examiner takes the position that it discloses melamine formaldehyde oligomers comprising melamine resin modified with tall oil fatty acids, which oligomers are the reaction products of formaldehyde melamine copolymer with tall oil fatty acids or octadecadienoic, and polymerized with hexakis (methoxymethyl)-1,3,5-triazine-2,4,6-triamine (melamine). Abstract 124:205109 is cited by the Examiner as disclosing formaldehyde –melamine phthalic anhydride trimethylolpropane copolymer, esterized with soybean oil fatty acids, or formaldehyde polymerized with propanediol, isobenzofurandione and 1,3,5-triazine-2,4,6-triamine. The Examiner states that Abstract 115:258415 discloses benzenedicarboxylic acid polymerized with 2,2-dimethyl-1,3-propanediol, 2-ethyl-2-(hydroxymethyl)-1,3-propanediol and hexanedioic acid, dodecanoate polymerized with formaldehyde and 1,3,5-triazine-2,4,6-triamine. The Examiner addresses Abstract 113:213128 by asserting that it discloses 1,3,5-triazine-2,4,6-triamine polymerized with cardanol.

The Examiner admits that the cited Abstracts do not disclose the melamine ring containing copolymer of formula I or the catalysts of the claimed method, but argues that they teach the required reactants under the same or similar conditions to form the claimed product and therefore the present invention would be rendered obvious. The Examiner further states that it would have been obvious to one of ordinary skill in the art to select the reactants under

conditions from the references within the limitations of the instant claims since they have been shown to be effective in a similar system and thus would have been expected to provide adequate results.

The Applicants respectfully traverse the Examiner's §103 rejections of claims 1-22 and the arguments in support thereof and request reconsideration and withdrawal of those rejections.

Regarding claims 1-22, none of the abstracts discloses or suggests the claimed structure or the use or the formation thereof. Nor do any of the abstracts provide any motivation to one of ordinary skill in the art to modify that reference to arrive at the present invention. Finally, the Abstracts provide no reasonable expectation of success because each of the reactions are very different from the claimed invention. Each argument is addressed in detail below.

Abstract 119:161751 discloses a resin prepared from melamine and aqueous HCHO (formaldehyde) which is mixed with powdered pulp, stearic acid, titanium oxide, pigment and other additives. However, the Abstract fails to disclose the claimed structure either as a reactant or reactant product. Furthermore, the Abstract does not disclose the reaction of cashew nut shell liquid with a melamine base resin. One of ordinary skill in the art would not make the leap from the disclosed reactants in the Abstract to the claimed reactants. Cashew nut shell liquid, which is a natural phenolic liquid, includes cardanol and cardol – neither of which are disclosed in the Abstract.

Abstract 112:181468 discloses the oxidative film formation of melamine formaldehyde oligomers but fails to disclose or suggest the claimed structure or the use of cashew nut shell liquid. The arguments set forth above related to Abstract 119:161751 apply here as well. Additionally, the reaction of a melamine formaldehyde resin with an aliphatic tall oil fatty acid will not produce the same reaction product and hence the same properties as the claimed reaction product which is the result of the reaction of a cashew nut shell liquid and a melamine base resin. The copolymers formed in accordance with the claimed invention provides good chemical resistance and film hardness generally not present with the reaction products of aliphatic fatty acids and melamine formaldehyde.

Abstracts 124:205109 discloses alkyd resin solutions for anticorrosive coatings that contain melamine resins. Abstract 115:258415 discloses the modification of oligomeric melamine formaldehyde resin with tall oil compounds. Both Abstracts disclose the reaction of low molecular weight esters with a melamine-formaldehyde resin, and both abstracts fail to

disclose or suggest the claimed structure or the use of cashew nut shell liquid. While the components of cashew nutshell liquid can incorporate some esters, unlike the reactants disclosed in these Abstracts, cashew nut shell liquid has the ability to react with unsaturated sites during processing, which gives the reaction product an added dimension that the resins disclosed in these two Abstracts would generally not have, which can result in enhanced physical properties. Also, the arguments from Abstract 119:161751 apply with respect to these two noted Abstracts and are relied herein as well.

Abstract 113:213128 discloses phosphorylated cardanol prepolymers that were obtained by simultaneous phosphorylation and oligomerization of a phosphorylated cardanol and an unsaturated pentadecylphenol extracted from the nuts of an *Anacardium Occidentale*, more commonly known as the cashew nut tree, however this Abstract does not disclose or suggest the claimed structure or a copolymer structure. Furthermore, it only describes the polymerization of melamine to cardanol and the abstract fails to disclose cardol. Also, the abstract only discloses extract from cashew nuts that participates in the reaction and not from the nut shells themselves. Additionally, it is unclear within Abstract 113:213128 what the precise reaction is that would take place. Amine groups – whether melamine, aliphatic, or aromatic amines – generally do not react directly with phenolic hydroxyls. Therefore, it is difficult for one of ordinary skill in the art to determine the reaction or the ultimate reaction product of the Abstract. Because the actual reaction of the Abstract is not clear, it would be further difficult for one of ordinary skill in the art to expect to modify that reference based on its teachings to achieve the present invention.

The next item to be addressed is the Examiner's argument that it would have been obvious to one skilled in the art to select the reactants as claimed under the conditions of the prior art since they have been shown to be effective in a similar system and thus the proposed modified system would have been expected to provide adequate results. Applicants respectfully disagree. All of the reactions disclosed in each of the abstracts are different from each other as well as from the claimed invention. A person of ordinary skill in the art would not simply randomly select reactants from any one of the Abstracts and apply reaction conditions of the prior art to such a system and expect them to react or even come close to the claimed product without a motivation in the prior cited art to do so as well as some indication of those conditions which would give reaction products as claimed. There are too many factors to consider such as compatibility, reactivity, control of side reactions, functional groups and reaction kinetics that

would need to be evaluated to determine how the given compounds would react, if at all.

Whether a particular catalyst may need to be present, is also a factor. Therefore, the Examiner has presumed too broadly concerning the reaction conditions and proposed reactants and has not established a reasonable expectation of success for any of the cited Abstracts.

Additionally, none of the cited Abstracts suggests a basis for any modifications to its respective disclosure that would lead one of ordinary skill in the art to the claimed invention. There is no suggestion or motivation present within each of the references that suggests modifying the reference to arrive at the claimed invention. Each reference lists its primary reactions and desired reactants and reaction products and is specific to those components. None of the cited Abstracts suggests removing, substituting, or altering its reactants to achieve the claimed invention.

Taking all of these arguments into consideration, claims 1-22 are not *prima facie* obvious over any of the cited Abstracts taken individually because each fails to teach or suggest the claimed structure or the use of cashew nut shell liquid and each fails to suggest modifying its teachings to achieve the claimed invention. There is also no basis for a reasonable expectation of success based on the teachings of the Abstracts. Thus Applicants respectfully request that the rejections be withdrawn and that claims 1-22 be allowed.

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In view of the above remarks, it is submitted that the claims patentably distinguish over the prior art that is cited in the Office Action. Reconsideration and a Notice of Allowance are respectfully solicited.

Respectfully submitted,

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(Date)

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Enclosures: Petition for One Month Extension of Time; Amendment Transmittal Letter